34 Years Ago at MSC

Electronics equipment for MSC's Mission Control Center to be provided by Philco

[Reprinted from the Oct. 16, 1963 Space News Roundup]

Philco Corporation, which has supported the government of the United States through its research and development in electronics and communications for more than half a century, assumed a major role in the manned space flight effort this year with receipt of a $33.8 million contract from the National Aeronautics and Space Administration to implement the Mission Control Center at the Manned Spacecraft Center.

A subsidiary of Ford Motor Company, Philco will provide the Mission Control Center (MCC) the complicated electronics equipment necessary to support communications, simulation, checkout and training, and control and display. (The Real Time Computer Complex used to support these systems is being built and will be maintained by IBM).

When completed in 1964, the MCC will serve as a centralized control center for the direct support of manned space flight. The first operational missions to be supported by the center will be Gemini rendezvous flights. Integrated in concept and design, the MCC will be capable of complete support of the Apollo earth-orbital and lunar missions.

Philco's work in the design, development and integration of systems in the Mission Control Center is under the direction of its Western Development Laboratories Division at Palo Alto, Calif., headed by Oscar T. Simpson, Philco vice president and WDL general manager. Dr. Walter B. LaBerge is General Operations Manager, heading Philco Houston Operations headquartered in the Main Building in downtown Houston. The company has about 250 employees in Houston.

Four other Philco organizations are providing manpower and other support on the MCC contract. They include the Communications and Electronics Division, the TechRep Division and the Philco Scientific Laboratory, all in the Philadelphia area; and Aeronutronic Division at Newport Beach, Calif.

Work on the project is being done at those locations as well as in Houston. Philco previously had been awarded the NASA contract for a design and development study of manned space flight operations and control and support. As a supplement to the MCC contract, the Philco Houston Operations, headed by T. L. Kraft, is engaged in a continuing study of support concepts and requirements for manned space flight beyond Gemini and Apollo.

Both Philco and its parent firm, Ford Motor Co., were prominent in developments forerunning the space age—Philco in communications and electronics; Ford as a pioneer in aviation. Both have been active in space since the early days of the U.S. aerospace program. Philco's WDL developed Courier, this nation's first active communications satellite. Aeronutronic, then a division of Ford, worked with NASA on Ranger.

Philco Corp. was founded in Philadelphia in 1892 as the Helios Electric Company and was known for a number of years as Philadelphia Storage Battery Company. "Philco," first a trademark, became a part of the corporate title in 1940.

The company first contributed to the U. S. defense effort in World War I by supplying batteries for portable field radio sets used by the U. S. Army. In the 1920s the firm turned from the development and manufacture of batteries and battery chargers for home radios to the production of radios.

With so much experience in providing goods and services in civilian communications, it was natural for Philco to expand its production into the more sophisticated electronics area demanded by World War II, later by government and industry, and now by the aerospace program.

During the war the company produced artillery shells and fuses, Bazooka rockets and fuses, radio and electronic communications equipment, ground and airborne radar equipment. Through what later became the TechRep Division the company contributed to the war manpower effort through the training of radio and radar technicians and service by its own personnel in the field. These civilian technicians installed and maintained complex radar and communications equipment for the Armed Forces in the U. S. and in combat zones in both World War II and the Korean conflict.

Approximately 3,000 Philco TechRep engineers and technicians—now are providing technical assistance to military, industrial, governmental and educational agencies about the globe, and to such Philco projects as implementation of the MCC. A TechRep served as a monitor at each tracking station on every flight of Project Mercury. The wartime production performance which brought Philco 21 "E" awards also gave it a commanding post-war position in electronics and led eventually to the founding of the Communications and Electronics Division and Western Development Labs.

The Communications and Electronics Division, with research, advanced development and engineering facilities in Philadelphia and Blue Bell, Pa., developed and produces the Sidewinder missile; makes fuses for other missiles; develops, builds, installs and maintains worldwide radar detection and communications systems; and display and data processing systems.

Philco's WDL Division, established just a little over six years ago, now has some 2,500 employees who work in a complex of modern buildings on a 24-acre site in Palo Alto. The division serves as systems manager for space programs, and designs, engineers and develops both earthbound and planetary unmanned spacecraft vehicles and systems, and communications and instrumentation sub-systems for manned spacecraft. It also serves as systems manager for large command and control systems for mission control of space operations (as in MCC); designs, engineers, builds and installs radio astronomy telescopes and antennas used in aerospace.

The division holds a current contract from NASA for a design study of an Advanced Solar Probe. The study could result in the most sophisticated unmanned spacecraft yet developed. It not only requires precise scientific instrumentation with stringent requirements for accuracy, but it has to operate under extreme environmental conditions (within 28 million miles of the sun) to which no previous spacecraft has been subjected.

With the transfer of Aeronutronic to Philco this year, Philco gained greater depth in engineering, development, manufacture and management of space, missile and weapon systems, electronics, display and storage equipment.

Aeronutronic has an important role in the MCC project—providing the display system section including a group display system, keyboards for use in selecting displays and interface equipment to connect the various display systems to the center's computers.

As an extension of its earlier lunar capsule work, Aeronutronic has been awarded a contract for a space capsule camera scanning System that would provide photographs showing fine detail of the moon's surface.

The division also is doing a study for NASA on requirements for a Martian "taxi," the Mars Excursion Module (MEM). Carried by a larger spacecraft, MEM would be designed to taxi astronauts between the spacecraft and the planet Mars, around which the spacecraft would be orbiting.

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MCC CONSOLE—Tom Fisher (right) and Grier Oberholtzer, Philco Houston Human Factors Department, discuss early conceptual design changes for the Flight Dynamics Officer's console. This and sixteen other consoles are planned for the Mission Operations Control Room of MSC's Mission Control Center.

Gilruth Center News

Hours: The Gilruth Center is open from 6:30 a.m.-10 p.m. Monday-Thursday, 6:30 a.m.-9 p.m. Friday, and 9 a.m.-2 p.m. Saturday.

Sign up policy: All classes and athletic activities are first come, first served. Sign up in person at the Gilruth Center and show a yellow Gilruth or weight room badge. Classes tend to fill up two weeks in advance. Payment must be made in full, in exact change or by check, at the time of registration. No registration will be taken by telephone. For more information, call x30304.

Gilruth badges: Required for use of the Gilruth Center. Employees, spouses, eligible dependents, NASA retirees and spouses may apply for photo identification badges from 7:30 a.m.-9 p.m. Monday-Friday; and 9 a.m.-2 p.m. Saturdays. Cost is $10. Dependents must be between 16 and 23 years old.

Hatha Yoga: A stress relieving, stretching and breathing exercise routine to unite body, mind and spirit. Classes meet from 5:30-6:30 p.m. Thursdays. Cost is $40 for eight weeks.

Nutrition intervention program: A six-week program to learn more about the role diet and nutrition play in health, including lectures, private consultations with a dietitian and blood analysis. Program is open to all employees, contractors and spouses. For more information call Tammie Shaw at x32980.

Defensive driving: One-day course is offered once a month. Pre-registration required. Cost is $25. Call for next available class.

Stamp club: Meets at 7 p.m. every second and fourth Monday in Rm. 216.

Weight safety: Required course for employees wishing to use the weight room will be offered from 8-9:30 p.m. Next class is Oct. 23. Pre-registration is required. Cost is $5. Annual weight room use fee is $90. Additional family members are $50.

Exercise: Low-impact class meets from 5:15-6:15 p.m. Mondays and Wednesdays. Cost is $24 for eight weeks.

Aikido: Introductory martial arts class meets from 5:15-6:15 p.m. Tuesday and Wednesday. Cost is $35 per month. New classes begin the first of each month.

Step/Bench aerobics: Classes meet from 5:15-6:15 p.m. Monday, Tuesdays and Thursdays. Cost is $32 for eight weeks. Kristen Maidlow, instructor.

Ballroom dancing: Beginner classes meet from 7-8:15 p.m. Thursdays. Intermediate and advanced classes meet from 8:15-9:30 p.m. Cost is $60 per couple.

Country and western dancing: Beginner class meets 7-8:30 p.m. Monday. Advanced class (must know basic steps to all dances) meets 8:30-10 p.m. Monday. Cost is $20 per couple.

Fitness program: Health Related Fitness Program includes a medical screening examination and a 12-week individually prescribed exercise program. For more information call Larry Wier at x30301.

Gilruth Home Page: Check out all activities at the Gilruth online at: http://www4.jsc.nasa.gov/ah/exceaa/Gilruth/Gilruth.htm

Ticket Window

The following discount tickets are available for purchase in the Bldg. 11 Exchange Store from 10 a.m.-2 p.m. Monday-Thursday and 9 a.m.-3 p.m. Friday and in the Bldg. 3 Exchange Store from 7 a.m.-4 p.m. Monday- Friday. For more information call x35350 or x30990.

Galveston Storm vs. Corpus Christi Sharks: Southwest Basketball League, 7 p.m. Nov. 7, Moody Gardens Convention Center, regular seating $20, VIP seating $40, on sale through Nov. 1.

EAA Wurstfest Bus Trip: Nov. 8, $20, on sale through Oct. 31.

EAA Texas Renaissance Festival Bus Trip: Oct. 25 and Nov. 15, adults $17.50; children (5-11) $11; under 5 (but need bus seat) $5; on sale through Nov. 14.

Texas Renaissance Festival: adults, $12; children 5-12, $5.50.

EAA Grand Casino Coushatta Bus Trip: Oct. 26, $5, no sale through Oct. 17.

EAA Halloween Dinner/Dance: Oct. 25, Gilruth Center; $15, on sale through Oct. 22.

Astroworld: $19 Blue Light Special, valid only in Houston, through Jan. 4.

Moody Gardens: Tickets are $9.50 for 2 of 4 events.

Seaworld: Adult $27.25; children (3-11) $18.25.

Space Center Houston: Adult $8.95; children (4-11) $6.40 JSC civil service employees free.

Movie discounts: General Cinema, $5.25; AMC Theater, $4.50; Sony Loew's Theater, $4.75.

Shirts: JSC logo T-shirt, $10, polo style, $23; International Space Station logo golf shirts, $26 and $28.

Stamps: Book of 20, $6.40.

1998 Franklin Planner replacement refill orders being taken now.

Metro passes: Tokens and value cards available.

***Suddenly Tomorrow Came**: A History of Johnson Space Center*, book available.

Upcoming events: EAA Spring Break Ireland Trip: March 21-29, $1,399 per person, double occupancy ($200 deposit per person, final payment due Jan. 21).